IN THE CLAIMS

Please amend the claims as follows:

1. An apparatus for controlling fixed-length transmission unit traffic in a switch platform, the apparatus comprising at least one bi-directional first-in-first-out (FIFO) unit,

Wherein each bi-directional FIFO unit comprises a first and a second unidirectional FIFO buffer, wherein a fixed-length transmission unit size of the first and second unidirectional FIFO buffers is programmable.

2. The apparatus of claim 1, wherein the first and second unidirectional FIFO buffers each comprise asynchronous read and write ports.

3. The apparatus of claim 1, wherein a word size of the first and second unidirectional FIFO buffers is programmable.

4. The apparatus of claim 1, wherein the at least one bi-directional FIFO unit is coupled to write at least one fixed-length transmission unit from and read at least one fixed-length transmission unit to at least one asynchronous transfer mode (ATM) interface, at least one frame relay interface, at least one voice interface, and at least one data interface.

5. The apparatus of claim 1 wherein the first unidirectional FIFO buffer is coupled to write at least one fixed-length transmission unit from an ATM interface.

6. The apparatus of claim 1, wherein the first unidirectional FIFO buffer is coupled to write at least one fixed-length transmission unit from a relay interface.

7. The apparatus of claim 1, wherein the first unidirectional FIFO buffer is coupled to write at least one fixed-length transmission unit from a voice interface.

A2 Cont.

8. The apparatus of claim 1, wherein the first unidirectional FIFO buffer is coupled to write at least one fixed-length transmission unit from a data surface.

9. The apparatus of claim 1, wherein the first unidirectional FIFO buffer is coupled to read at least one fixed-length transmission unit to at least one switch, wherein the at least one switch handles fixed-length transmission units from sources having a plurality of bandwidths.

10. The apparatus of claim 9, wherein the at least one switch is coupled to route the at least one fixed-length transmission unit to an OC12 trunk line and to at least one service module.

11. The apparatus of claim 10 wherein the at least one service module is coupled to provide the at least one fixed-length transmission unit to at least one service subscriber using T1, E1, T3, E3, 0C3, and OC 12 ports.

12. The apparatus of claim 1, wherein the second unidirectional FIFO buffer is coupled to read at least one fixed-length transmission unit to an ATM interface.

A2 Cont.

13. The apparatus of claim 1, wherein the second unidirectional FIFO buffer is coupled to read at least one fixed-length transmission unit to a frame relay interface.

14. The apparatus of claim 1, wherein the second unidirectional FIFO buffer is coupled to read at least one fixed-length transmission unit to a voice interface.

15. The apparatus of claim 1, wherein the second unidirectional FIFO buffer is coupled to read at least one fixed-length transmission unit to a data interface.

16. The apparatus of claim 1, wherein the second unidirectional FIFO buffer is coupled to write at least one fixed-length transmission unit from at

least one switch wherein the at least one switch handles fixed-length transmission units from sources having a plurality of bandwidths.

17. The apparatus of claim 16, wherein the at least one switch is coupled to route the at least one fixed-length transmission unit from an OC12 trunk line and from at least one service module.

18. The apparatus of claim 17, wherein the at least one service module is coupled to provide the at least one fixed-length transmission unit to at least one service subscriber using T1, E1, T3, E3, OC3, and OC 12 ports.

19. The apparatus of claim 1, wherein the at least one bi-directional FIFO unit comprises a diagnostic interface, wherein the diagnostic interface supports a non-destructive read of the at least one bi-directional FIFO unit while at least one fixed-length transmission unit is being written to and read from the at least one bi-directional FIFO unit.

20. The apparatus of claim 1, wherein the at least one fixed-length transmission unit is written to the second unidirectional FIFO buffer from the first unidirectional FIFO buffer over a first enabled diagnostic loop.

21. The apparatus of claim 1, wherein the at least one fixed-length transmission unit is written to the first unidirectional FIFO buffer from the second unidirectional FIFO buffer over a second enabled diagnostic loop.

22. The apparatus of claim 1, wherein each unidirectional FIFO buffer outputs a write port fixed-length transmission unit count, wherein a write port of each unidirectional FIFO buffer outputs a status indicating space available in the unidirectional FIFO buffer for at lest one more fixed-length transmission unit.

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23. The apparatus of claim 22, wherein at least one master bi-directional FIFO unit ceases reading at least one fixed-length transmission unit to the first unidirectional FIFO buffer of at least one slave bi-directional FIFO unit in response to write port fixed-length transmission unit count of the first unidirectional FIFO buffer, wherein the at least one master bi-directional FIFO unit disables at least one switch from routing at least one fixed-length transmission unit to the at least one slave bi-directional FIFO unit in response to the write port fixed-length transmission unit count, wherein the at least one switch routes the at least one fixed-length transmission unit to another of the at least one slave bi-directional FIFO units in response to the write port fixed-length transmission unit count of the first unidirectional FIFO buffer.

24. The apparatus of claim 23, wherein the at least one master bi-directional FIFO unit resumes reading the at least one fixed-length transmission unit to the second unidirectional FIFO unit resumes reading the at least one fixed-length transmission unit to the second unidirectional FIFO buffer of the at least one slaved bi-directional FIFO unit in response to the write port fixed-length transmission unit count of the second unidirectional FIFO buffer, wherein the at least one master bi-directional FIFO unit enables at least one switch to route at least one fixed-length transmission unit to the at least one slave bi-directional FIFO unit in response to the write port fixed-length transmission unit count of the second unidirectional FIFO buffer.

A 2 Cont.

25. The apparatus of claim 1, wherein each unidirectional FIFO buffer outputs a read port fixed-length transmission unit count, wherein a read port of each unidirectional FIFO buffer outputs a status indicating space available in the unidirectional FIFO buffer for at least one more fixed-length transmission unit.

26. The apparatus of claim 2, wherein the write port logic of each unidirectional FIFO buffer is synchronous with the write clock.

27. The apparatus of claim 26, wherein the write clock operates at a frequency substantially equal to 50 megahertz.

28. The apparatus of claim 26, wherein the read port logic of each unidirectional FIFO buffer is synchronous with a read clock.

29. The apparatus of claim 28, wherein the read clock operates at frequency substantially equal to 21 megahertz.

30. The apparatus of claim 28, wherein the read clock operates at a frequency substantially equal to 42 megahertz.

A3 SUBF1 31. The apparatus of claim 1 wherein at least one invalid fixed-length transmission unit can be discarded from each unidirectional FIFO buffer.

32. The apparatus of claim 1, wherein the switch platform comprises two switches.

SUBF1 A4 33. The apparatus of claim 1, wherein the switch platform comprises at least one service module and at least one fixed-length transmission unit bus controller, wherein the at least one fixed-length transmission unit bus controller is coupled among the at least one service module and a least one switch, wherein the at least one service module comprises at least one slave bi-directional FIFO unit, and wherein the at least one fixed-length

transmission unit bus controller comprises at least one master bi-directional FIFO unit.

34. A network switch platform comprising:

at least one service module;

at least one fixed-length transmission unit bus controller coupled among the at least one service module and at least one switch;

at least one bi-directional first-in-first-out (FIFO) unit located in the at least one service module and the at least one fixed-length transmission unit bus controller, wherein each bi-directional FIFO unit comprises a first and a second unidirectional FIFO buffer, wherein a fixed-length transmission unit size of the first and second unidirectional FIFO buffers is programmable;

at least one diagnostic interface, wherein the at least one diagnostic interface supports a non-destructive read of the at least one bi-directional FIFO unit while at least one fixed-length transmission unit is being written to and read from the at least one bi-directional FIFO unit; and

at least one discard enable signal input to the at least one bidirectional FIFO unit, wherein at least on invalid fixed-length transmission unit can be discarded from the at least on bi-directional FIFO unit upon receiving a discard enable signal via the at least one discard enable signal input.

35. The network switch platform of claim 34, wherein the at lest one bi-directional FIFO unit is coupled to write at least one fixed-length

transmission unit from and read at least one fixed-length transmission unit to at least one asynchronous transfer mode (ATM) interface, at least one frame relay interface, at least one voice interface, and at least one data interface.

36. The network switch platform of claim 34, wherein the at least one fixed-length transmission unit is written to the second unidirectional FIFO buffer from the first unidirectional FIFO buffer over a first enabled diagnostic loop, wherein at least one fixed-length transmission unit is written to the first unidirectional FIFO buffer from the second unidirectional FIFO buffer over a second enabled diagnostic loop.

37. The network switch platform of claim 34, wherein each unidirectional FIFO buffer outputs a write port fixed-length transmission unit count, wherein a write port of each unidirectional FIFO buffer outputs a status indication space available in the unidirectional FIFO buffer for at least one more fixed-length transmission unit, wherein each unidirectional FIFO buffer outputs a read port fixed-length transmission unit count, wherein a read port of each unidirectional FIFO buffer outputs a status indicating space available in the unidirectional FIFO buffer for at least one more fixed-length transmission unit.

38. The network switch platform of claim 34, wherein the first and second unidirectional FIFO buffers each comprise asynchronous read and write ports, wherein the write port logic of each unidirectional FIFO buffer is synchronous with a write clock, and wherein the read port logic of each unidirectional FIFO buffer is synchronous with a read clock.

39. The network switch of claim 34, wherein a word size of the first and second unidirectional FIFO buffers is programmable.

SUB F1

40. The network switch platform of claim 34, wherein the at lest on bi-directional FIFO unit is coupled to read at least one fixed-length transmission unit to and write at least one fixed-length transmission unit from the least one switch, wherein the switch handles [cells] fixed-length transmission units from sources having a plurality of bandwidths.

A5

41. The network switch platform of claim 34, wherein the at least one service module is coupled to receive at least one fixed-length transmission unit from and provide at least one fixed-length transmission unit to at least one service subscriber using T1, E1, T3, E3, OC3, and OC 12 ports.

SUB B3

42. A method for controlling fixed-length transmission unit traffic in a switch platform, the method comprising the step of transferring at least one fixed-length transmission unit among a plurality of ports having a plurality

A5 Cont

of bandwidths using a bi-directional first-in-first-out (FIFO) unit, wherein the bi-directional FIFO unit comprises a first and second unidirectional FIFO buffer having a programmable fixed-length transmission unit size.

43. The method of claim 42, further comprising the step of programming the word size of each of the first and second unidirectional FIFO buffers.

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44. The method of claim 43, wherein the step of transferring comprises the steps of:

synchronously writing the at least one fixed-length transmission unit from at least one port to the first unidirectional FIFO buffer; and

synchronously reading the at least one fixed-length transmission unit from the first unidirectional FIFO buffer to at least one switch, wherein the reading is asynchronous with the writing.

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45. The method of claim 42, wherein the step of transferring comprises the steps of:

synchronously writing the at least one fixed-length transmission unit from at least one switch to the second unidirectional FIFO buffer; and

synchronously reading the at least one fixed-length transmission unit from the second unidirectional FIFO buffer to the at least one port, wherein the reading is asynchronous with the writing.

46. The method of claim 42, further comprising steps of:

discarding at least one invalid fixed-length transmission unit from each unidirectional FIFO buffer; and

executing a non-destructive read of the at least one bi-directional FIFO unit while at least one fixed-length transmission unit is being written to and read from the at least one bi-directional FIFO.

A6 Cont.

47. The method of claim 42, further comprising the steps of:

writing at least one fixed-length transmission unit to the second unidirectional FIFO buffer from the first unidirectional FIFO buffer using a first enabled diagnostic loop; and

writing at least one fixed-length transmission unit to the first unidirectional FIFO buffer from the second unidirectional FIFO buffer over a second enabled diagnostic loop.

48. The method of claim 42, further comprising steps of:

outputting a write port fixed-length transmission unit count from each unidirectional FIFO buffer;

outputting a read port fixed-length transmission unit count form each unidirectional FIFO buffer; and

outputting from a read port of each unidirectional FIFO buffer a status indicating space available in the unidirectional FIFO buffer for at least one more fixed-length transmission unit.

49. The method of claim 42, wherein the plurality of ports comprise at least one asynchronous transfer mode (ATM) interface, at least one frame relay interface, at least one voice interface, at least one data interface, at least one network switch interface, at least one OC12 interface, and at least one OC3 interface.